

Notice of Allowability

Application No.

10/762,542

Examiner

Edward Wojciechowicz

Applicant(s)

OKAJIMA, MUTSUMI

Art Unit

2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to RCE filed 4-5-07.
2. ☒ The allowed claim(s) is/are 1-14.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date 4-5-07
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Fetea on 10-25-06.

The application has been amended: amend Claim 1 and Claim 5 as follows:

Claim 1 (Currently Amended): A semiconductor device comprising:

a first conductive film formed on a semiconductor substrate via a first gate insulating film;
a second conductive film formed on the first conductive film via a second gate insulating film; and
a third conductive film buried in a contact hole formed by removing a part of the second conductive film and the second gate insulating film so that the contact hole penetrates the second conductive film and the second gate insulating film to reach an upper surface of the first conductive film, the third conductive film has first and second end portions, the third conductive film extends substantially parallel to the second conductive film from an upper surface of the second conductive film to the upper surface of the first conductive film, the first end portion is at a same level as the upper surface of the second conductive film, the second end portion is at a same level as the upper surface of the first conductive film, and the third conductive film electrically contacts the first and second conductive films.

Claim 5 (Currently Amended): A semiconductor device comprising:

a nonvolatile semiconductor memory cell having a stacked gate formed by stacking a floating gate and a control gate above a semiconductor substrate such that the floating gate is not in direct contact with the control gate; and

a transistor other than the memory cell, formed by stacking a first conductive film and a second conductive film and bringing the first and second conductive films electrically into contact with each other, thereby forming a gate wiring,

Art Unit: 2815

wherein, in the transistor portion other than the memory cell, a third conductive film is buried in a contact hole formed so that the contact hole penetrates the second conductive film to reach an upper surface of the first conductive film, the third conductive film has first and second end portions, the third conductive film extends substantially parallel to the second conductive film from an upper surface of the second conductive film to the upper surface of the first conductive film, the first end portion is at a same level as the upper surface of the second conductive film, the second end portion is at a same level as the upper surface of the first conductive film, and the third conductive film electrically contacts with the first and second conductive films.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward Wojciechowicz whose telephone number is 571-272-1739. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ken Parker can be reached on (571) 272-2298. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Edward Wojciechowicz
Primary Examiner
Art Unit 2815

EW: ew

REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance: the prior art fails to show the inventive structure with a gate stack with a first gate electrode over a first dielectric and covered with a second dielectric and a second gate layer, with a contact hole penetrating from the top surface of the second gate layer through the second gate layer and the second dielectric to the upper surface of the first gate layer, and a third conductive film filling the contact hole such that the top of the third conductive layer is at the same level as the upper surface of the second gate layer and the third conductive film electrically contacts the first and second gate layers.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward Wojciechowicz whose telephone number is 571-272-1739. The examiner can normally be reached on Monday through Thursday.

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Edward Wojciechowicz
Primary Examiner